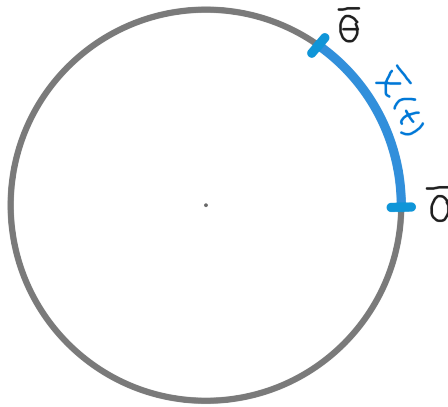


# Student Research Talks (StReeTs)

George Mason University

## An integral over continuous paths in $S^1$

Kelsi Listman  
George Mason University



### Abstract

The goal of this research was to calculate a specific integral:

$$\int_{\mathcal{C}_{\bar{\theta}}^{S^1}} e^{\int_0^1 \bar{y}'(t) d\bar{x}(t)} d\mu_{\bar{\theta}}^{S^1}(\bar{x}),$$

as it has applications in representation theory; the above integral in product with another factor is roughly the formula for the character of certain groups given some representation. This talk will explore the components of this integral to understand how one interprets integration in this context, including a brief introduction to Wiener measure in the path space  $\mathcal{C}^{\mathbb{R}}$ . The Disintegration Theorem and a consequence of the Cameron-Martin formula will be used to evaluate this integral with certain restrictions on  $y$ .

Date: Friday, March 28th

Time: 2:30pm–3:20pm

Place: Exploratory Hall 4106

**Pizza will be served at the presentation.**

For further information or for special accommodations (including dietary restrictions), please contact Kelsi Listman or Gabe Lumpkin via email at [klistman@gmu.edu](mailto:klistman@gmu.edu) or [glumpkin@gmu.edu](mailto:glumpkin@gmu.edu) by Thursday, March 27.